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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,795	09/30/2003	Mark R. Richards	42P17287	8367

7590

01/24/2006

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EXAMINER

SMOOT, STEPHEN W

ART UNIT	PAPER NUMBER
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2813

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/676,795

Applicant(s)

RICHARDS ET AL.

Examiner

Stephen W. Smoot

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11 is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 and 16 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11-25-05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office action is in response to applicant's RCE received on 25 November 2005.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's IDS received on 25 November 2005 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-10, 12-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Independent claim 1 and dependent

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claim 12, as amended on 16 May 2005, contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

The applicant's original disclosure does not provide support for the feature "the second portion ... having a second thickness that is less than the first thickness" as claimed in claim 1, lines 8-10. Claims 2-10 are rejected under 35 U.S.C. 112, first paragraph, because they depend on claim 1.

Regarding claims 12-20, the applicant's original disclosure does not have support for the limitation "the thickness of each interface section is at least 150 angstroms" as set forth in claim 12, when combined with the limitation "each upper interface section having a second thickness that is greater than ... the first thickness" from claim 11, lines 12-14, because the applicant relies on the originally disclosed titanium nitride layer (44) with a thickness between 50 and 100 angstroms to support this limitation. Claims 13-20 also remain rejected under 35 USC 112, first paragraph, because they depend on claim 12. Further, regarding claim 19, the applicant's original disclosure does not have support for the limitation "the interface sections are made of titanium oxide", when combined with the limitation "each upper interface section having a thickness that is greater than ... the first thickness" from claim 11, because the applicant relies on the originally disclosed titanium nitride layer (44) as an example of an interface layer of smaller thickness (i.e. a layer that is not titanium oxide).

Allowable Subject Matter

4. Claim 11 is allowed.

5. The following is a statement of reasons for the indication of allowable subject matter: Claim 11 is allowed because the prior art of record does not teach or suggest, in combination with the other claim limitations, a semiconductor device that includes a second layer with a plurality of lower interface sections and with each lower interface section having a first thickness, a third layer on the second layer with a plurality of polymeric sections that includes a plurality of roughness formations on a surface of the polymeric sections, and a fourth layer on the third layer with a plurality of upper interface sections and with each upper interface section having a second thickness, wherein the second thickness is greater than both a height of the roughness formations and the first thickness.

Response to Arguments

6. Applicant's arguments filed on 27 October 2005 (see pages 5-6) have been fully considered but they are not persuasive, except for the arguments regarding claim 11.

Regarding claims 1-10, the applicant argues that the titanium oxide layer (68) originally disclosed as having a thickness of at least 150 angstroms is an example of the

as claimed first portion and the titanium nitride layer (44) originally disclosed as having a thickness between 50 and 100 angstroms is an example of the as claimed second portion. That is, the applicant's argument is on the basis that the first portion and the second portion are different materials. However, claim 1 as amended on 16 May 2005 has the limitation "an interface material having first and second portions", which implies that the first portion and the second portion are made of the same material. So, the applicant's original disclosure does not have support for the first portion and the second portion being made of the same material.

Claim 11 is allowed because the claim does not require the second and fourth layer to be made of the same material.

Regarding claims 12-20, the applicant's original disclosure does not have support for the limitation "the thickness of each interface section is at least 150 angstroms" as set forth in claim 12, when combined with the limitation "each upper interface section having a second thickness that is greater than ... the first thickness" from claim 11, lines 12-14, because the applicant relies on the originally disclosed titanium nitride layer (44) with a thickness between 50 and 100 angstroms to support this limitation (i.e. a thickness that is less than 150 degrees). Claims 13-20 also remain rejected under 35 USC 112, first paragraph, because they depend on claim 12. Further, regarding claim 19, the applicant's original disclosure does not have support for the limitation "the interface sections are made of titanium oxide", when combined with the limitation "each upper interface section having a thickness that is greater than ... the first thickness" from claim 11, because the applicant relies on the originally disclosed titanium nitride

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layer (44) as an example of an interface layer of smaller thickness (i.e. a layer that is not titanium oxide).

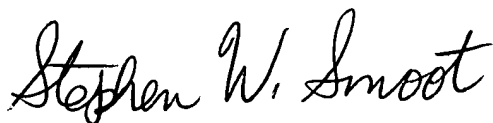
Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen W. Smoot whose telephone number is 571-272-1698. The examiner can normally be reached on M-F (8:00 am to 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr. can be reached on 571-272-1702. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

sws



**STEPHEN W. SMOOT
PRIMARY EXAMINER**